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A Doctoral Problem in Physical Anthropology
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by

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The Problem

In his book "Races of Europe" Coon by the use of such terms as Corded, Bell-Beaker, Gadogan, etc., presumes a rather close racial correlation between cultural development and geographical distribution. What evidence for this racio-archaeological correlation can be found in the Upper and Middle Mississippi cultures?

Chapter I

Introduction

Before attempting to examine the evidence of a close racio-archaeological correlation in the Upper and Middle Mississippi culture, I believe that I should examine the manner in which this concept of a close racio-culture correlation was employed by Coon in his book "Races of Europe." Coon's book was primarily an attempt to describe the racial types of Europe. At the outset, however, Coon found that any definition of "race as a group of people reasonably unified in the physical sense and living in one place" was inadequate when applied to human types found in Europe.[1] For this inadequacy he gave two reasons. First, one could not "draw the borderline between that place and the next," and, second, one could not tell "where one race leaves off and the next begins."[2] He believed though that this dilemma might be resolved "with the application of a third dimension, that of history."[3] History, with numerically adequate and competently documented physical data, might show what places were centers of racial dispersion, what the races were, and which places had functioned as points of intermediacy and blending. Therefore, Coon reconstructed the racial and cultural history of Europe,

[1]Coon, Carleton S. "The Races of Europe". New York. The Macmillan Company, 1939. P. 11.

[2]Ibid. P. 11.

[3]Ibid. P. 12.

and ultimately created a classification of races in Europe based on the geographical location of the groups, the physical characteristics of the groups and history of those groups. In reconstructing the racial history of Europe, the assumption implicit in his writing is that when two groups are found to have been of the same racial type this indicates that there existed a genetic connection between those groups and their separation has been caused by migration and later isolation. He also presumes that many of these racial migrations were accompanied by diffusion of certain cultural complexes. Thus he speaks of Corded, Ladogan, Bell-Beaker, etc. migrations in which a race with its correlative culture moved in Europe. (A criticism or evaluation of his work is not attempted in this paper as it seems irrelevant to the problem at hand.)

As may now be apparent the problem I am attempting to solve is of a different nature from the one of Coon. Coon attempted to define the physical types of Europe by describing their physical characteristics, geographical location, and history. In presenting his history, he indicated or assumed that often physical types were highly correlated with culture types. My problem is quite the reverse, for I shall attempt to indicate that a high correlation exists between certain American races and the Upper and Middle Mississippi culture. To show this correlation it will be necessary to describe the history and location of these cultures, and to examine the physical types that

occur in each. In presenting the racio-archaeological connections, I shall, in passing, define the races of that area. Thus, the problem fundamental for Coon I shall but touch upon, while the problem of racio-cultural correlation, that Coon merely used as a tool and took little notice of, will be of foremost importance in this paper.

Since I shall deal with a variety of different types of data in the solution of the problem, I believe that I should here state the method I shall use, and thus indicate the manner in which the various topics are logically connected. The method may briefly be stated as follows: First, I shall define the Upper and Middle Mississippi cultures and briefly indicate what is known of their histories; next, I shall discuss the racial classifications that have been applied to the people of the Upper and Middle Mississippi area (and the rest of North America), then I shall present a selected series of anthropometric data for the various cultural divisions of the Mississippi patterns which will indicate what racial types may be closely correlated with the two cultures; and, finally, I shall summarize the evidence for a close racio-cultural correlation in the Upper and Middle Mississippi culture.

Chapter II

The Middle and Upper Mississippi Cultures

Archaeologically the culture content of the Upper and Middle Mississippi phases has long been known. The history of these two phases is not yet fully worked out, but recently great steps in that direction have been undertaken. For this reason, I shall briefly define the Upper Mississippi and Middle Mississippi phases, then, on a more speculative plane, present their histories, as I see them.

Dr. Thorne Duell, in Appendix I, entitled "The Application of a Classificatory Method to Mississippi Valley Archaeology" in Rediscovering Illinois, page 207 to 226, defined the Middle Mississippi as that archaeological manifestation whose culture assemblage includes the following diagnostic traits:

"1. Truncated pyramidal mounds, often in groups, employed primarily as substructures

2. Houses with rectangular floor outlines

3. Wattle and daub house walls

4. Equal-armed pipes in varieties other than the projecting stemmed

5. The employment of marine, cut marine shells and pearls for personal adornment

6. Pottery: effigy, beaker, plate and other specialized forms of common occurrence

7. Pottery: two or more wares present

8. Pottery: narrow, trailing, incising (whole clay is plastic) scratching, etching etc. (after drying or firing) are the chief techniques of decoration

9. Pottery: designs commonly include bands or chains of backward triangles, arches, scrolls and spirals

10. Pottery trowels

11. Awl-sharpeners."

The following were given as Upper Mississippi phase determinate traits:

"1. Mounds produced incidental to burial

2. Houses with circular or elliptical floor outlines

3. Pipe: projecting, stem variety of equal-armed type

4. Personal adornment, use of perforated canine teeth of animals

5. Pottery: common olla generally sole form

6. Pottery: a utilitarian ware usually only one present

7. Pottery: chief technique of decoration are trailing, broad-line incising and punctuating

8. The drawshave (bone beamer)

9. The flat, perforated needle from deer ribs and other animal bones."

The history of Middle Mississippi has seldom been dealt with by archaeologists in publication, though I believe that all of them, upon being questioned, would probably present a very similar history of that culture. The picture here presented is largely taken from the article by Ford and Willey in the American Anthropologist, Vol. , 194 .

The Middle Mississippi culture seems to have been born somewhere in the south along the Mississippi River. The most plausible ancestor that has thus far been brought forth is the

Troyville culture of Louisiana. Many of the culture elements of the Middle Mississippi had a Middle American similarity, so that it has been hypothisated that these elements, thrust upon the Troyville culture gave rise to the Coles Creek culture. This in turn gave rise to all the other Middle Mississippi manifestations. Around 1300 it appears that the members of this southern culture migrated northward along the river and established their culture anew. Rather late in the Middle Mississippi culture period further Mexican elements appeared to form the Buzzard Cult. Just previous to the time of French colonization there was a gradual retreat southward of this Middle Mississippi, and in historic times the French found various Muskhogean people possessing a Middle Mississippi culture and living south of the Ohio River. On purely archaeological grounds, one might expect to find that the Middle Mississippi culture, since it had been carried by the migration of its originators, had a uniform physical type. The validity of this hypothesis will be tested later in this paper.

The history of the Upper Mississippi culture is probably less well known than that of Middle Mississippi phase. Dr. James Griffin of the University of Michigan, however, has recently contributed much to our knowledge of Upper Mississippi and, presently will publish a paper on its history in the Michigan Academy of Science papers. I have seen the manuscript form of this paper, and the history of Upper Mississippi here presented will be based upon it.

Dr. Griffin treats Upper Mississippi as a blend of Middle Mississippi and Woodland.[3a] This blending took place in varying degrees, and the different degrees of blending formed the various aspects of the Upper Mississippi phase.[3] The Iroquois aspect is seen as a basically Woodland culture that received second-hand influences from Middle Mississippi.[4] "The Fort Ancient aspect... represents a Middle Mississippi offshoot which merged culturally with a basic Woodland group."[5] The Madisonville and Baum foci of this aspect culturally seem to represent a strong Middle Mississippi influence with few Woodland elements; while the Anderson and Fort group seem to have been basically a Woodland group, only tinged by Middle Mississippi. The Fisher focus of an unknown aspect of the Upper Mississippi phase appears to be a merging basic Middle Mississippi group with but a touch of Woodland.- Dr. Griffin at present believes that the Oneota aspect of Upper Mississippi is a Middle Mississippi culture that had diffused into a Woodland territory (like Aztalan) and that in turn was influenced by Plains Mississippi.[7] Certain foci of the Oneota aspect have been identified as Siouan (the Winnebago, Iowa, Oto, and Osage.) Speculation based upon our archaeological evidence would lead one to the conclusion that the Upper Mississippi culture (since it is a mixture of Woodland and Middle Mississippi) will probably have a low racial correlation.

[3a]Griffin, James. The Fort Ancient Aspect. University of Michigan Press, 1943. Chapter XV.

[4]Griffin, James. "The Iroquois in American Prehistory." Papers of the Michigan Acad. of Science, Art, and Letters. Vol. XXIX, 1943.

[5]Ibid. Note 3, page 508.

6 cont. John Griffin, personal communication

7Griffin, James. "The Iroquois in American Prehistory." Note 3, Page 300.

Chapter III

The Races of North America with particular reference to the Illinois and Upper Mississippi Areas

Since the conceptual framework of the problem of this paper had been derived from Coon, I shall define race in his terms:-"...a group race ably unified in the physical sense" (i.e.- have a number of physical characteristics in common) "and living in one place."[9] Fortunately, this basic definition need not be here up-ended (as Coon deemed necessary in discussing the races of Europe) since the dilemma of overlapping physical types and areas did not occur in Upper and Middle Mississippi times. From the dates at hand it would appear that the races of this area may be easily recognized as to their physical characteristics and geographical location.

The races of this area, however, have been poorly defined. The reasons for their faulty definition are numerous, the most prevalent ones being: subjective bias, inadequate measurements, and poor terminology. I therefore believe that it is necessary to deal briefly with a few of the poorer classifications in order to illustrate why I have accepted the particular definition used here.

The first classification of American Indian races that I shall consider is the one originated by Dixon. He has classified the American Indians into eight groups: Proto-Australoids, Proto-Negroids, Curly-Hair, Mediterraneans, Paleo-Alpines, Alpines, Mongoloids, and Ural types. His classification is based upon three indices: cephalic, length-midget and nasal indices. Furthermore he believes that these various races owe their existence to migrations of similarly named people from the Old World. My objections are obvious. The nomenclature used by Dixon, infers genetic relationships that are totally unproven, the criteria used for racial classification(three indices) are very

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9. Coon, ibid., p. 11.

tenuous, and the derivation of these races has no substantiating evidence.

The second classification which I shall discuss has received wider recognition, these being the racial types set up by Hooton.[11] Hooton classifies the American Indians into: Basket Maker, Pseudo-Negroid, Pseudo-Australoid, Plains, long-faced Europeans, Pseudo-Alpine and Large Hybrid types. He specifically states that the names of his races represent genetic relationships. For the most part his classification was based upon a large number of measurements taken on one sex series (Pecos skeletal materials). As stated before, there is no empirical evidence for the genetic relationship of these racial types, nor is there justification, on a genetic basis, for the use of his terms. Furthermore, racial types should be based upon a large number of skeletal series if they are to be representative of, and valid for, a large area such as North America.

Hrdlicka's classification of American Indian types is based upon the largest number of measurements on the largest series of skeletal data.[12] The types and the physical characteristics of each are based upon a firm foundation. However, his nomenclature of these types leaves much to be desired. He has classified his types as Algonkin, Siouan, Gulfid, etc. This terminology is very confusing when one considers the physical types of specific tribes, for one finds that there are Siouans of the Algonkin types(Iroquois), Algonkins of the Siouan type, and Plains tribes of the Gulfid types.

The classification I propose to use is one based upon the earlier works of von Eickstedt[13] and later modified by Georg Neumann.(C.Snow and M. Benson[14] also use his classification). It appears to have none of the faults of the

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10. Dixon, R.B. The Racial History of Man

11. Hooton, E.A. Indians of Pecos

12. Hrdlicka, Alex A Catalogue of Human Crania in the United States National Museum. Proc. of the U.S.National Museum, vol. 57, art. 7, 1917

(cont)

other classifications. The racial groupings of the area under consideration here are called Sylvids, Centralids and Prairies. The terms lend themselves easily to taxonomy. The Sylvids are characterized as dolichocephalic, hypsicranial, facially leptoeuryprosopic and acrocranial. These tribes occupied the northeastern part of North America. The Centralid group occupied the northeastern section of North America and are characterized as brachycephalic, hypsicranial, broad-faced, with rugged cranial contours. The Prairid race lived in the plains area of North America, and their diagnostic physical characteristics are low vaults, mesocephalic to dolichocephalic skulls, wide flat faces, and prominent noses. Since von Eickstedt's data was not statistically documented and since Georg Neumann's statistics were not published, I offer as proof for the existance of such types the data gathered by Ales Hrdlicka.[15] I suggest that, in interpreting this data, one remember that the type here described as Sylvid has been named Algonkin by Hrdlicka, while the Centralid correspond to Hrdlicka's Gulfid and Prairid to his Siouan.

In the following chart I shall present three pooled series of skulls which I consider to be representative of the Sylvid, Centralid, and Prairie races.

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12. (cont)
Hrdlicka, Ales Report on an additional collection of Skeletal Remains from Arkansas and Louisiana Journal of the Academy of Science of Florida

13. von Eickstedt, E. Rassenkunde und Rassengeschichte der Menschheit Stuttgart, 1934.

14. Personal communication

15. See note 12.

Chart Showing Racial Types in the Mississippi Area

Measurements	Typical Sylvids(18)	Typical Centrallids(19)	Typical Prairids (20)
L	182.5	171	179.2
B	137	139	139
LB	104.2	98	---
h'	141.7	138.5	129.8
B'	93.4	---	---
J	136.5	141.4	141.8
GH	123.1	114	121.2
G'H	75.1	74.7	76.2
OML	42.9	42.6 *	42 *
OL	35	34	35.9
NB	26.1	24	26.9
NL	54	50.6	54.6
Indices			
100 B/L	75.39	81.5	77.8
" H/L	77.6	80.9	75.9
" H/B	103.1	94.8	92.6
" GH/J	89.65	87	85.5
" G'H/J	54.88	51.4	53.7
" OL/OML	81.82	---	81.4 *

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17. Abbreviations used are those agreed upon at the Birmingham Archaeological Conference, 1938. For meanings of abbreviations see the following page.

18. Georg Neumann The Crania from the Hagen Mound and Their Relation to those of Two Late-Prehistoric Populations of Central Illinois. p.80 from: Transactions of the American Philosophical Society, vol. XXXII, Pt. I, Nov. 1941. Pooled Naples Mills crania

19. Ales Hrdlicka The Anthropology of Florida Florida State Hist. Soc., no. 1, 1922, p. 118. Pooled series from Florida

20. Ales Hrdlicka Catalogue of Human Crania in the United States National Museum, vol. 69, art. 5, 1927, p. 59. Yankton Sioux Indian crania (pooled).

Definitions of Abbreviations used in Crania Charts

Measurements

L-----Glabella to Opisthocranion length
B-----Maximum breadth
LB----Basion to nasion length
h'----Basion to bregma height
B'----Minimum frontal breadth
GL'---Basion to prosthion length
BO'---Biorbital breadth
J-----Bizygomatic breadth
GH----Total facial height
G'H---Upper facial height
MO'---Anterior interorbital breadth
OBL---Orbital breadth
OH----Orbital height
NB----Nasal breadth
NL----Nasal length
ML----Maxillo-alveolar length
MB----Maxillo-alveolar breadth

Indices

100 B/L-----Cranial index
100 H'/L-----Length-height index
100 H'/B----Breadth-height index
100 B'/B----Fronto-parietal index
100 GH/J----Total facial index
100 G'H/J---Superior facial index
100 OBL/OL--Orbital index
100 NB/NL---Nasal index
100 ML/MB---Maxillo-alveolar index
100 J/L-----Cranio-facial index
100 B'/J----Lepto-frontal index

Definitions of Abreviations used in Crania charts

Measurements

L -------Glabella to Opisthocranion length
B ------- Maximum breadth
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h' ------Basion to bregma height
B' ------Minimum frontal breadth
GL'------Basion to prosthion length
BOW------Biorbital breadth
J -------Bizygromatic breadth
GH-------Total facial height
G'H------Upper facial height
EOW------Anterior interorbital breadth
OML------Orbital breadth
OL-------Orbital height
NB-------Nasal bred dth
NL-------Nasal length
ML-------Maxillo-alveolar length
MB------- " " breadth

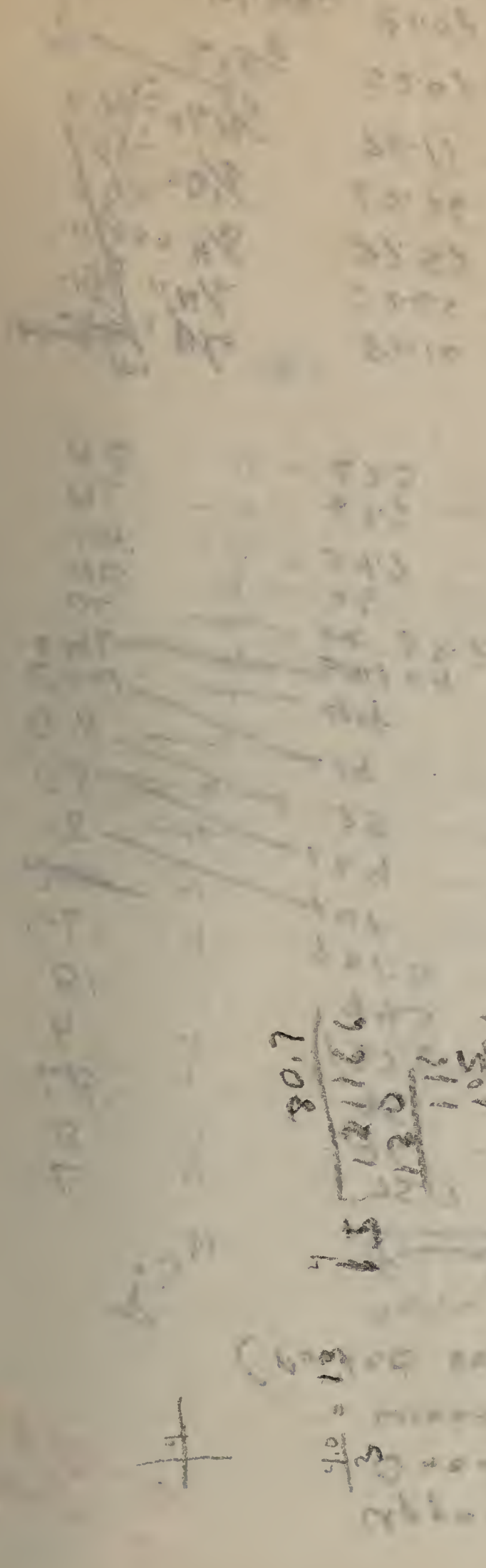
Indices

100 B/L------ Cranial index
100 H'/L----- Length - height index
100 H'/B------Breadth - height index
100 B'/B------Fronto-parietal index
100GH/ J------Total facial index
100G'H/J------Superior facial index
100 OML/OL----Orbital index
L00 Nb/NH-----Nasal index
100 HB/HL-----Maxillo-a veolar index
100 J/B ----- Cranio-facial index
100 B'/J------ Zygo-frontal index

Upper Mississippi
Oneota Aspect
Winnebago focus
(Pooled series ~~of History~~ Centralia + Prairie Winnebago)

	P.	N.	Mean of Prairie	N.	Centralia
L	4	1	75.7	2	170
B	4	1	46.	2	149
LB	4		95	2	102
h'	4		122.6	2	140
B'	4		94.3	2	93
GL'	4		101.0	2	94
~~BH~~	4		144	2	180
J	4		124	2	74
GH	4		75	2	17
G'H	4		19		
EOW	4		~~44~~	2	40
OML	4		~~327~~ 44	2	34
OL	4		35.7	2	25
NB	4		26	2	53
NH'	4		54.7	2	52
ML	4		53.7	2	66
MB	4		67.3		

~~100~~ 101					
~~100~~ ~~BL~~	4	BL	83.12	2	87.6
HB	11	H/L	72.66	2	88.8
H	13	H/B	87.57	2	93.8
B	13	B'/B	65.36	2	
GA/J		GH/J	86.11	2	53.6
G'H/J		G'H/J	52.07	2	74.3
?			81.07	2	47.8
		GL/OML	47.57	2	
		NB/NH	117.49	2	
		HB/HL	48.19	2	
?		B'/J	66 22	2	



Fisher Focus

The anthropometric data from the Fisher site shows that 18 individuals belong to the Centralid type while 6 belong to the Sylvid type.[1] I have presented the individual series of measurements on each skull as well as the pooled Sylvid and Centralid groups.

[1] Sylvid--Burials Fr 78, M 1, F 1, W 100, Wm 101, 102.
Centralid--all the other burials.

Upper Mississippi

Fisher Focus
Pooled Sylvid and Centralid ceramics

	Sylvid	Centralid
L	182.67	176.3
B	139.5	145
h'	140.2	141.8
S	136.2	142.1
GH	97	103.3
G'H	71	70.4
OML	71.05	70.1
OL	36.9	~~82.5~~
NB	25.6	26.7
NH	55.15	52.
~~HL~~		
~~HB.~~		
100 B/L	76.4	82.5
100 H'/L	76.75	80.5
100 GH/S	95.88	78.99
100 G'H/S	50.35	49.42
100 OL/OML	80.85	84.38
100 NB/ND	45.97	80.15

?

100.4
139.5 / 140.2
139
1200

098
145 / 141.8
1305
113
1120
110

Fisher (continued)

	38	25	51	37	69	101	102	19	9L	WM 22
				173	173	182	185	173	175.5	170
L	176	172	173				139	150	146	137
B	141	140	139	149	149	137		100	109	110
LB	~~136~~98	110	—	110	103			138	149	133
h'	136	143	—	145	138	143	137			
B'										
GL'										
BOW						✓				
J.	145	143	—	152	135	135	143	147	132	132
GH	98	110	—	100	102		—	99	107	102
G'H	71	70	68.3	75	65	67	—	76	76	68
EW							—	41.5	36.5	41.3
JHL	38	42.4	41.3	42.9	34.6	41.5	—	36.5	31.7	34
OL	31.7	31.7	35	40	34.5	33.3	—	26.3	28	23
NB	28.6	25	22.5	27	25.4	25.4	—	56.3	41.6	52.7
NH'	52.4	54	52.4	54	52.4	52.4	—	—	54	—
ML	57.5	—	56	54	54	—	—	66.3	67	—
MB	67.	66.7	66.7	60	64	—	—			

B/L	80.1	81.4	80.3	86.1	86.1	75.2	75.1	86.7	84.3	80.3
H/L	77.2	83.1	—	83.8	80	78.5	74	80	86.1	78.4
H'/B										
B'/B										
G~~H~~/S	84.4	85.4	—	—	85.9	91.8		84.3	96.2	87.2
G'H/S	~~48.9~~	48.9	51	49.3	48.1	50		50.7	57.5	51.5
OL/OML	83.1	73.8	84.7	93.2	87.1	80.2		87.9	86.8	82.1
IVB/NA	54.5	51.8	52.4	49.5	48.4	48.4		46.7	58.8	43.6
I+B/HL										
J/B										
B'/J										

Upper Mississippi
? Aspect
Fisher Focus

(~~Pooled series compiled from Langford's data~~)

(Complete series)

	78	4	15	39	57	67	1	49	51	W1	73	75	109	110
L	176	168	184	181	178	180	184	175	184	181	176	181	181	188
B	138	150	147	139	147	143	149	146	142	135	140	148	150	146
LB		—	117	101	105	114	113	108	106	—	119		~~43~~ 149	143
h'	137	—	143	146	137	141	146	140	138	143	—			
B'	—													
GL'	—													
BoW														
J	130	146	150	142	143	144.5	—	139	138	127	140	140	143	144
GH	—	—	115	98	101	105	—	106	97	—	—	— 106	—	—
G'H	—	—				69	—	70	70	76	—	— 69.8	—	—
EoW	—	—	—	67	—	—	—	—	—	—	—	— —	—	—
OWL	41	42.9	42.6	37	39.7	42	—	42	42	39.7	39.7	— 43.6	—	—
OL	33.3	38.1	33.3	31.7	37	37.5	—	35	33.3	33.3	33.1	— 31.7	—	—
NB	25.5	2.7	26.2	30.2	25	27	—	27.5	23.8	27	26.2	27 27	—	—
NH	57	55	52.4	45	54	53	—	52.4	55.6	55.6	57	— 52.4	—	—
ML	—	54		55.5	57	60	—	50.6	57	—	54	— 62	—	—
MB	—	66.7	76	63.5	66.5	68.5	—	66.7	71.4	—	64	— 76	—	—
				70.8	82.5	74.4	81	83.4	77	78.5	84.5	84.1 86.2	77.6	
				~~77~~	~~78.3~~	~~77.4~~	81	83.4	83.4	71	~~74.5~~	~~75~~ ~~82~~	—	
				~~176~~	77	78.3	79.5	85	75.2	79	—	— 84.3	86	
100 B/L	78	88.2	80	80.6										
H'/L	77.8	83.9	77.1											
H'/B	—													
B'/B	—													
GH/J	93.8	82.6	80.6	—	86	77.9	—	85.6	94.9	102	—	— 90.8	—	
G'H/J	—	48	44.6	50	51	47.7	—	50.3	50.7	—	—	— 48.8	—	
GL/ML	81.2	88.8	78	95.8	80.6	84.2	—	83.3	74	83	83.3	— 72.2	—	
NB/NH	44.7	49.1	50	49.8	48.1	50	—	52.4	42.8	48	45.8	— 51.5	—	
HB/HL	—													
J/B	—													
B'/J	—													

Madisonville Focus

The series from Madisonville consists of 39 skulls. Unfortunately there is considerable variability within the group. However, the majority are Centralid (actually about 34). Thus in spite of the variability I am presenting a pooled series. The pooled series represents a Centralid type. I feel justified in presenting this pooled series for two reasons: one, a chart showing the 39 skulls would be cumbersome, and second, since the predominant type is Centralid and the pooled type is Centralid, an insignificant amount of masking has taken place by this pooling.

Anderson Focus

This anthropometric data has been given to me by George Neumann. He has stated that there is little variability among the individuals of the group and that it was "safe to pool them."

As may be seen, the type is definitely Sylvid. In the light of the archaeological data, this is not surprising since the Anderson focus is the most Woodland-like focus of the Fort Ancient Aspect.

The Seneca Focus

The data available on the Iroquois is of three types: Ritchie's general observations lacking anthopometric data, Hrdlicka's data that is called Iroquois but may not be such since he considers any prehistoric skull from upper New York to be Iroquois, and the pooled series of Newman which were made from measurements on skulls excavated by T. Wray in western New York State at a known historic Seneca site. I have chosen the latter series as the one most trustworthy. Also, Newman has said that it is typical of all the Iroquois materials. I have also used his pooled series since the individual measurements show little variability.

These skulls are Sylvid in type. Also according to Ritchie they are identical with the Owasco physical type.[22] If one accepts Griffin's interpretation of Iroquois archaeology, that the Iroquois represent a basically Woodland (Owasco) people who have been influenced by Middle Mississippi culture, it is not surprising to find that they have a Sylvid physical type.[23]

[22]Ritchie, W. B. The Pre-Iroquoian Occupations of New York State. Rochester Museum of Art and Science, 1944. P. 101.

[23]Griffin, James.

Spoon River

This cranial data comes from two mounds in Fulton County, Illinois, Fo[14] and F[034]. The series here presented represents the undeformed male population of these two prehistoric habitations.

Unfortunately George Neumann has usually presented these skulls as a pooled series. The data on individual crania show that this pooling is not justified and hides the true physical characteristics and racial types of the population. On the following pages I have presented the series of measurements and indices taken on each individual. These individual series show that the Spoon River focus population consisted of about 20 Centralids and 7 Sylvids. For comparative purposes I have pooled the Centralid and Sylvid series.

The Spoon River focus components indicate that the Centralid-Middle Mississippi correlation was close though not as close as that of the series previously presented. This lower racio-archaeological correlation may be explained by observing the geographical position and archaeological content of the Spoon River components. Geographically the Spoon River focus is situated in an area that was primarily Woodland. Also, archaeologically the Spoon River components show some Woodland admixture such as pottery with a cord marked surface finish, flexed burials, etc. Thus it would appear that Middle Mississippi Centralid group when migrating into the northern Woodland territory (Fulton County) mixed with the Sylvids already there.

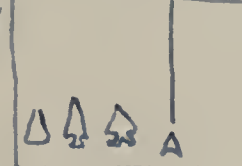
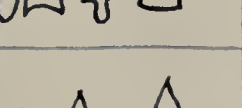
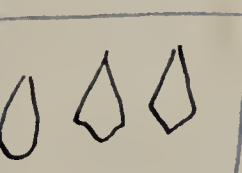
Middle Miss.
Monks Mound aspect
Spoon River Focus
Focus components
~~[illegible]~~

Burial Number	[illegible]								Mean	Sylvid			mean
	6	16	35	46	49	50	58	68		78	99	16	
L.	171	187	172	180	177	171	175	179	—	183	179	187	
B	138	143	144	141	136	145	144	141		135	128	143	
LB	105	104	110	106	—	107	103	101		105	108	102	
h'	146	145	155	142	—	149	146	144		144	143	145	
B'	91	91	98	92	89	99	85	89		93	95	94	
GL'	97	98	107	101	—	102	—	91		103	101	98	
BOW	97	104	105	—	105	100	104	105		—	100	104	
J	131		142	139	136	146	—	147		144	130	146	
GH	115		133	125	119	123	—	127		—	113	125	
G'H	73		80	77	73	74	—	78		70	72	78	
EOW	23		26	18	21	18	16	—		23	22	22	
OML	41		44	—	46	44	46	—		—	43	45	
OL	33		34	—	33	37	35	—		—	36	35	
NB	27		30	26	31	28	25	30		28	27	28	
NH'	54		55	56	54	52	53	56		51	51	56	
ML	51		63	55	60	52	—	57		—	52	59	
MB	65		71	—	70	64	—	71		—	65	68	

	6	35	46	49	50	58	68	78	99	16
100 B/L	80.70	83.72	78.33	76.83	84.79	82.28	78.77	73.77	71.51	76.47
H'/L	85.38	90.17	79.05	—	87.13	83.43	80.44	78.69	79.88	77.54
H/B	105.76	107.63	100.71	—	102.25	100.37	102.13	106.66	111.72	101.39
B'/B	65.94	68.05	65.25	65.94	68.27	59.03	63.12	68.88	74.22	65.73
GH/J	87.78	93.66	89.73	87.50	84.24	—	86.39	—	86.42	85.61
G'H/J	55.72	56.34	55.40	55.67	50.68	—	53.06	48.61	55.38	53.42
OL OML	80.48	77.27	—	71.73	84.09	76.08	—	—	83.72	77.77
NB/NH	150.00	54.84	46.43	57.41	53.84	47.17	53.07	54.70	52.44	50.00
MB/ML	127.40	112.69	—	116.66	132.69	—	124.56	—	125.00	115.25
J.B	94.42	98.61	98.58	100.10	100.68	—	104.25	106.66	101.56	102.10
B'J	64.45	69.01	66.14	65.44	67.81	—	60.54	64.58	73.08	64.38

MEASUREMENTS AND INDICES OF THE ADULT MALE CRANIA FROM MOUNDS Fº14, Fº34, Fº85, AND Fº86

Mound	No.	1	5	8	9	17	21	40	44	45	47	48	49	50	51R	51L	52R	52L	54	55	60	61	62	63	66	72	(8)100 (1)	(17)100 (1)	(17)100 (8)	(9)100 (8)	(47)100 (45)	(48)100 (45)	R (52)100 (51)	L (52)100 (51)	(54)100 (55)	(61)100 (60)	(63)100 (62)	(45)100 (8)	(9)100 (45)
Fº14...	6	171	105	138	91	146	123	97	97	131	115	73	26	23	41	41	33	33	27	54	51	65	43	40	107	85?5	80.70	85.38	105.79	65.94	87.78	55.72	80.48	80.48	50.00	127.45	93.02	94.92	69.46
	16	187	102	143	94	145	125	98	104	146	125	78	26	22	45	44	35	35	28	56	59	68	48	42	113	85.5	76.47	77.54	101.39	65.78	85.61	53.42	77.77	78.54	50.00	115.25	87.50	102.10	64.38
	35	172	110	144	98	155	131	107	105	142	133	80	28	26	44	42	34	33	30	55	63	71	50	38	105	85	83.72	90.17	107.63	68.05	93.66	56.34	77.27	78.57	54.54	112.69	76.00	98.61	69.01
	46	180	106	141	92	142	123	101	.....	139	125	77	24	18	.....	45	.....	36	26	56	55	.....	49	39	112	84	78.33	79.00	100.71	65.25	89.93	55.40	.....	80.00	46.43	.....	79.59	98.58	66.19
	49	177	.....	136	89	.....	123	.....	105	136	119	73	25	21	46	45	33	34	31	54	60	70	50	44	111	83	76.83	.....	.....	65.44	87.50	53.67	71.73	75.55	57.41	116.66	88.00	100.00	65.44
	50	171	107	145	99	149	129	102	100	146	123	74	23	18	44	44	37	35	28	52	52	69	49	43	106	88	84.79	87.13	102.75	68.27	84.24	50.68	84.09	79.54	53.84	132.69	87.75	100.68	67.81
	58	175	103	144	85	146	129	.....	104	.....	.....	.....	23	16	46	43	35	37	25	53	.....	.....	.....	.....	103	82	82.28	83.43	101.38	59.03	.....	.....	76.08	86.05	47.17	.....	.....	.....	.....
	68	179	101	141	89	144	120.5	97	105	147	127	78	.....	.....	.....	45	.....	32	30	56	57	71	47	44	109	84	78.77	80.44	102.13	63.12	86.39	53.06	.....	71.11	53.57	124.56	93.61	104.25	60.54
	78	188	105	135	93	144	116	103	.....	144	.....	70	27	23	.....	42	.....	36	28	51	.....	.....	46	.....	.....	77	73.77	78.69	106.66	68.88	.....	48.61	.....	85.71	54.90	.....	.....	106.66	64.58
	99	179	108	128	95	143	120	101	100	130	113	72	25	22	43	42	36	37	27	51	52	65	44	43	94	85	71.51	79.88	111.72	74.22	86.92	55.38	83.72	88.09	52.94	125.00	97.72	101.56	73.08
Fº34...	5	189	107	136	97	147	.....	105	101	140	120	69	.....	22	44	43	33	33	28	51	60	63	51	37	97	82.5	71.96	77.77	108.09	71.32	85.71	49.29	75.00	76.74	54.90	105.00	72.55	102.94	69.29
	7	184	111	144	92	153	.....	102	106	.....	124	76	27	21	46	47	37	36	29	52	58	74	44	44	.....	85.5	78.26	83.15	106.25	63.89	.....	.....	80.43	76.59	55.77	127.58	100.00	.....	.....
	10	187	121	141	101	154	.....	106	100	.....	125	73	.....	.....	42	.....	34	36	25	52	58	61	46	34	98	87	75.40	82.35	109.22	71.63	.....	.....	80.95	.....	48.08	105.17	73.91	.....	.....
	21	175	110	143	92	149	.....	101	103	145	120	76	24.5	18	47	46	36	36	25	56	56	67	47	41	108	87.5	81.71	85.14	104.20	64.34	82.76	52.41	76.59	78.26	44.64	119.64	87.23	101.40	63.45
	25	177	101	145	101	149	.....	97	98	145	114	69	24	18	44	42	33	33	25	49	52	.....	45	37	113	84	81.92	84.18	102.76	69.66	78.62	47.59	75.00	78.57	51.02	.....	82.22	100.00	69.66
	28	183	103	138	99	143	.....	104	.....	.....	.....	82	.....	22	.....	.....	35	.....	29	60	58	67	47	38	.....	82	75.41	78.14	103.62	71.74	.....	.....	.....	.....	48.33	115.52	80.85	.....	.....
	35	187	109	136	103.5	145	.....	102	103	140	125	76	25	20	46	45	37	37	26	54	53	.....	47	.....	109	83	72.73	77.54	106.62	76.10	89.29	54.29	80.43	82.22	48.15	.....	.....	102.94	73.93
	40	172	103	132	98	140	.....	107	103	.....	.....	74	.....	.....	.....	.....	31	32	.....	50	61	77	51	43	.....	79	76.74	81.40	106.06	74.24	.....	.....	.....	.....	.....	126.23	84.31	.....	.....
	90	188	98	135	89	145	.....	98	98	144	127	78	.....	20	42	40	34	34	24	53	57	63	48	42	99	83	71.81	77.13	107.41	65.93	88.19	54.17	80.95	85.00	45.28	110.53	87.50	106.67	61.81
	109	183	107	141	90	139	.....	110	101	139	121	75	27.5	22	43	43	33	33	27	52	60	68	52	40	99	78	77.05	75.96	98.58	63.83	87.05	53.96	76.74	76.74	51.92	113.33	76.92	98.58	64.75
	137	174	106	139	99	144	.....	102	100	134	123	78	.....	22	45	42	33	35	27	59	59	69	54	42	98	82	79.88	82.76	103.60	71.22	91.79	58.21	73.33	83.33	45.76	116.95	77.77	96.40	73.88
	160	180	104	143	92	141	.....	105	98	133	115	72	23	17	44	44	36	35	26	54	56	60	52	35	.....	82.5	79.44	78.33	98.60	64.34	86.47	54.14	81.82	79.55	48.15	107.14	67.31	93.01	69.17
	163	190	.....	145	102	.....	.....	.....	107	145	119	76	25	22	46	46	36	36	25	55	52	.....	43	41	106	87	76.32	.....	.....	70.34	82.07	52.41	78.26	78.26	45.45	.....	95.35	100.00	70.34
	165	179	99	142	98	147	.....	104	105	140	127	76	28	24	45	44	33	34	24	51	60	63	51	37	97	77.5	79.33	82.12	103.52	69.01	90.71	54.29	73.33	77.27	47.06	105.00	72.55	98.59	70.00
	167	181	104	145	98	142	.....	98	105	144	121	74	30	23	44	44	33	32	27	49	55	68	44	40	95	87.5	80.11	78.45	97.93	67.59	84.03	51.39	75.00	72.73	55.10	123.64	90.91	99.31	68.06
	D55	173	101	134	83	142	.....	102	99	136	122	74	26	22	41	41	32	32	27	53	56	69	49	42	115	79.5	77.46	82.08	105.97	61.94	89.71	54.41	78.05	78.05	50.94	123.23	85.71	101.49	61.03
	D128	188	.....	146	95	.....	.....	.....	.....	143	.....	78	24	19	43	.....	33	33	27	56	58	72	49	44	.....	80	77.66	.....	.....	65.07	.....	54.54	76.74	.....	48.21	124.14	89.80	97.95	66.43
Fº85...	8	177	109	138	97	144	.....	102	99	135	120	70	23	18	45	45	35	35	27	48	55	65	50	38	97	83	77.97	81.36	104.35	70.29	88.89	51.85	77.78	77.78	56.25	118.18	76.00	97.83	71.85
	11	175	104	136	89	138	.....	98	100	137	115	73	24	21	44	42	33	33	27	54	53	.....	44	40	107	88	77.71	78.86	101.47	65.44	83.94	53.28	75.00	78.57	50.00	.....	90.91	100.74	64.96
	15	181	105	139	96	143	.....	98	100	132	121	73	26	23	43	42	34	34	26	50	55	66	47	39	93	85	76.80	79.01	102.88	69.06	91.67	55.30	79.07	80.95	52.00	120.00	82.98	94.96	72.73
	31	187	.....	137	94	.....	.....	.....	96	129	129	81	24	21	41	40	34	33	26	57	58	69	50	44	103	81	73.26	.....	.....	68.61	100.00	62.79	82.93	82.50	45.61	118.97	88.00	94.16	72.87
	34	194	112	134	87	146	.....	99	101	142	122	79	24	19	44	44	37	37	25	59	53	66	46	40	97	86	69.07	75.26	108.96	64.93	85.92	55.63	84.09	84.09	42.37	124.53	86.96	105.97	61.27
	42	189	111	137	94	135	.....	110	99	143	124	76	26	22	43	41	40	40	29	57	59	71	49	41	100	81.5	72.49	71.43	98.54	68.61	86.71	53.15	93.02	97.56	50.88	120.34	83.67	104.38	65.73
	44	178	105	142	99	143	.....	100	100	144	129	77	26	23	42	41	34	35	24	54	57	66	52	40	102	88.5	79.78	80.34	100.70	69.72	89.58	53.47	80.95	85.37	44.44	115.79	76.92	101.41	68.75
	52	180	97	139	93	143	.....	94	98	137	109	63	25	21	43	40	32	33	24	47	54	61	49	40	101	82	77.22	79.44	102.88	66.91	79.56	45.99	74.42	82.50	51.06	112.96	81.63	98.56	67.88
	54	188	115	138	98	145	.....	107	105	141	120	77	24	21	46	46	37	37	27	55.5	57	64	49	38	103	85	73.40	77.13	105.07	71.01	85.11	54.61	80.43	80.43	48.65	112.28	77.55	102.17	69.50
	58	176	106	143	84	141	.....	101	91	134	117	70	21	19	41	41	35	33	25	52	55	68	47	45	99	81	81.25	80.11	98.60	58.74	87.31	52.24	85.37	80.49	48.08	123.64	95.74	93.71	62.69
	71	193	101	135	98	140	.....	92	104	136	125	73	29	25	45	43	36	36	29	51	52	61	53	.....	108	86	69.95	72.54	103.70	72.59	91.91	53.68	80.00	83.72	56.86	117.31	.....	100.74	72.06
Fº86...	2	175	101	136	90	137	117	95	95	132	114	69	.....	20	41	39	32	32	27	50	48	58	39	39	111	84	77.71	78.29	100.74	66.18	86.36	52.27	78.05	82.05	54.00	120.83	100.00	97.06	68.18
	13	179	98	131	88	133	116	96	95	132	131	81	23	20	41	40	33	34	22	57	57	.....	48	37	105	87	73.18	74.30	101.53	67.18	99.24	61.36	80.49	85.00	38.60	.....	77.08	100.76	66.67

subsistence	pottery	Points	metate		
none ½ agric – ½ wild plants	basket pottery				
tobacco - Corn, chile ½ agric – ½ wild plants	corrugated pottery				
mainly corn & beans & cocentli, squash cotton, tobacco	Zuquil pottery		long square & border 2/2		
mainly wild out But Cave Corn, beans, squash gourd cotton	El Porvenir Ground II Pottery		2/2 - 1/1	simple corrugated Loose Cotton	
some ↑ mainly wild plants but squash, beans, gourd			2/2 wide 1/1 border 2/2	tanned blanket simple coil net	
mainly wild plants beans + squash			1/1 3/3 2/2	↑	
some animal bone mainly wild food plants but some beans				simple coil rels & felt twine coil net	

Sierra Madre of Tamp.

Correlation of Middle Mississippi Crania with the Centalid and Sylvid Physical Types

Measurements	Typical Centralid	Kentucky stone graves	Tenessee stone graves	Koger's Island Lu25 & Lu92	Spoon River Centralids	Spoon river Sylivids	Typical Sylivids
L	171	167	171.9	169.5	178.4	185.1	182.5
B	139	146	143	153.2	141	133	137
Lb	98			101.3	105.2	104.6	
h'	138.5	142	143.2	144.3	146	144.59	141.7
B'			92.2	96.7	93.7	95.69	
Gl'			98.5	97.1	91	101.6	
BOW			—	103			
J	141.4	139	138.7	144.6	140.4	140,89	136.5
Gh	124	121	122	128.8	122.9	122	123.1
G'h	74.7	74	74.5	75.7	78.7	75	75.1
EOW				93.8	19	21.6	42.9
OML	42.6 34		34	34.7	44.1 34	44 35	35
OL	24	26	26	25.5	26.2	27	26.1
NB	50.6	52	52	52.8	51.4	53.7	54
NL	--	--	56	53.3	56.7	54	54.6
MB							

Indicies							
100 B/L	81.5	87.2	83.7	90.5*	79.58	73.59	75.39
h'/L	80.9	85	83.8	85.4	82.44	78.10	77.6
h8/B	99.8	97	98.4	93.1	103.34	106.5	103.12
B'/B	--	--	--	62.7	66.64	70.56	67.97
GH/J	87	86	87.5	86	80.77	87.14	89.65
G'H/J	52.4	53	50	50	50.35	52.33	54.88
OL/OML	--			78.4	77.38	79,57	81.82
NB/Nh	47.7	50	50	48.2	50.29	50.63	48.51

Correlation of the Upper Mississippi Crania with the Centalid, Sylvid and Prairid Physical Types

M	Type Syl.	Seneca	Anderson	Fisher Sylvid	Type Cent.	Fisher Cent.	Madisonville	Winnebago Cent.	Type Prairid	Winnebago Prairid
L	1 2.5	186.9	181.8	182.67	171	176.3	178.5	170	179.2	175.7
B	137	137.5	136.3	139.5	139	145	143.9	149	139	146
LB		105	104.5				103.7	102		95
h'	141.7	141.7	140.5	140.2	138.5	141.8	136.3	140	129.8	127.6
B'		94	94				94	93		94.3
GL'		100.17	99.6				99.5	99		101
BOW		100.20	110.8				101			
J	136.5	136.8	140.2	136.2	141.4	142.1	141.2	140	141.8	144
GH	123.1	125	123.9		124	123.3	121	--	121.2	124
G'H	75.1	76.1	74.4	71	74.7	70.4	72	74	76.2	75
EOW		20.87	19.7				20	17	42.0	19
OML	42.9	42.88	43.7	41.05	42.6	40.1	43.3	40	35.9	35.7
OL	35	33.88	34.5	39.6	34	37.2	33.6	34	26.9	26
NB	26.1	27.87	26.9	25.6	29	26.7	21.1	25		
NH	54	54.89	53.3	55.1	50.6	52	52.6	53	54.6	54.7
ML	54.6	56.17	54.2		--		55.4	52		53
MB		66.13	68.8				65	66		63.7

B/L	75.39	73.26	75.16	76	81.5	82.5	80.2	87.6	77.8	83.12
H/L	77.76	75.94	76.91	76.75	80.9	80.5	76.58	88.8	75.9	72.66
H/B	103.1	103.7	103.5	100.8	99.3	98	94.58	93.8	92.6	87.57
B'/B		68.61	68.80				65.33	65.36		
GH/J	89.65	91.34	88.65	95.88	87.90	78.94	85.33	86.11	85.5	86.11
G'H/j	54.88	55.47	53.13	50.35	52.4	49.42	51.34	53.6	53.7	52.07
OML	81.82		80.65	80.85	—	84.38	77.13	74.3	81.4	81.07
NB/Nh	48.52	50.91	50.65	45.97	47.5	50.15	51.78	47.9	49.4	47.57

Koger Island

The Koger Island cranial materials come from two sites in the Pickwick basin: $Lu^{v}32$ and $Lu^{025}.16$ Both are Middle Mississippi sites. The measurements and indices on each individual cranium are not available to me so I must present their pooled series. This pooled series that I am presenting is not the one published, but one made by Snow on a larger series at a later date. Since Snow and Newman are competent physical anthropologists and since concerning their individual measurements and indices they have stated "We feel justified in pooling them to form a total 'Koyer Island" series"[17] I believe that their pooling of the cranial data does not mask the characteristic of each individual series.

The individuals who make up this pooled series are all males and both deformed and undeformed. The pooled data indicate the people of Koyer's Island (Middle Mississippi culture) were of the Centralid type.

[16] Newman, C. T. and C. T. Snow, "Skeletal Material from Pickwick Basin", from W. S. Webb and D. L. De Jarnette, Archaeological Survey of Pickwick Basin in the Adjacent Portions of the States of Alabama, Mississippi and Tennessee. B. A. E. Bulletin 124, 1942.

[17] Ibid. P. 141.

Denied

~~Contested~~
Waived

Agreed

Atomist

Kentucky Stone Graves

Archaeologically the skeletal material from the stone graves or stone cists of Kentucky may be identified as being Middle Mississippi. No other groups have been ascertained to have had this particular type of burial custom.

The series here presented was published by Ales Hrdlicka in an article "The Anthropology of Florida", a publication of the Florida Historical Society, No. 1, 1922. This particular data may be found on pages 111 and 112. The series represent a series of 21 males, cranially undeformed. Since the measurements and indices taken on each individual show considerable uniformity, I have presented this anthropometric data as a pooled series.

A glance at the accompanying data indicates that the group was round-headed, hypsicranial, and broad faced and therefore of the Centralid type. Thus there appears to be a rather close correlation between the Centralid race and the Middle Mississippi culture in Kentucky.

Tennessee Stone Graves

The material was measured by Marshall L. Newman and is as yet unpublished. It represents a reworking of the crania that R. G. Fuller originally measured in 1916 and which formed the basis for his doctoral dissertation at Harvard. The group is highly selected in that all are males and all are undeformed. Within this group a few skulls (about three) were definitely dolicocephalic, deep vaulted, and narrow faced, but the majority of the individuals were round headed, high vaulted, and wide faced (Centralid). Since the majority were Centralid and since the pooled series represents a Centralid group, I do not believe my statistics have been marked by pooling. Therefore I have used a pooled series.

The archaeological material associated with these crania is Middle Mississippi. Therefore, there appears to be again a close correlation (37 to 40) between the Centralid physical type and the Middle Mississippi culture.

Middle Mississippi Phase
Tenn.-Cumberland Aspect?
Stone Graves in Tenn. Focus
(Pooled Series from Tenn.)

L	41	171.9
B	40	143
LB	—	—
h'	28	143.2
B'	111	92.2
GL'	68	98.5
BOW	—	—
S.	72	139.7
GH	75	122
G'H	82	74.5
EOW	—	—
OML	—	—
OL	89	34.3
NB	43	26
NH'	17	52
ML	81	56.0
MB	82	68.7

Indicies

100 B/L	35	83.7
" H/L	24	93.8
" ~~B/H~~ H'/B	23	98.4
" B'/B	—	—
" GH/J	49	87.5
" G'H/J	62	52.4
" OL/OML	—	—
" NB/NH'	43	50
" H B/HL	—	—
" J/B	—	—
" B'/J	—	—

A Doctoral Problem in Physical Anthropology
presented to the Department of Anthropology
in fulfillment of the requirements for the
Degree of Doctor of Philosophy.

by

Richard T. MacNeish

January 22, 1945

The Problem

In his book "Races of Europe" Coon by the use of such terms as Corded, Bell-Beaker, Ladogan, etc., presumes a rather close racial correlation between cultural development and geographical distribution. What evidence for this racio-archaeological correlation can be found in the Upper and Middle Mississippi cultures?

Chapter I

Introduction

Before attempting to examine the evidence of a close racio-archaeological correlation in the Upper and Middle Mississippi culture, I believe that I should examine the manner in which this concept of a close racio-culture correlation was employed by Coon in his book "Races of Europe." Coon's book was primarily an attempt to describe the racial types of Europe. At the outset, however, Coon found that any definition of "Race as a group of people reasonably unified in the physical sense and living in one place" was inadequate when applied to human types found in Europe.[1] For this inadequacy he gave two reasons. First, one could not "draw the borderline between that place and the next," and, second, one could not tell "where one race leaves off and the next begins."[2] He believed though that this dilemma might be resolved "with the application of a third dimension, that of history."[3] History, with numerically adequate and competently documented physical data, might show what places were centers of racial dispersion, what the races were, and which places had functioned as points of intermediacy and blending. Therefore, Coon reconstructed the racial and cultural history of Europe,

[1] Coon, Carleton S. "The Races of Europe". New York. The Macmillan Company, 1939. P. 11.

[2] Ibid. P. 11.

[3] Ibid. P. 12.

and ultimately created a classification of races in Europe based on the geographical location of the groups, the physical characteristics of the groups and history of those groups. In reconstructing the racial history of Europe, the assumption implicit in his writing is that when two groups are found to have been of the same racial type this indicates that there existed a genetic connection between those groups and their separation has been caused by migration and later isolation. He also presumes that many of these racial migrations were accompanied by diffusion of certain cultural complexes. Thus he speaks of Corded, Ladogan, Bell-Beaker, etc. migrations in which a race with its correlative culture moved in Europe. (A criticism or evaluation of his work is not attempted in this paper as it seems irrelevant to the problem at hand.)

As may now be apparent the problem I am attempting to solve is of a different nature from the one of Coon. Coon attempted to define the physical types of Europe by describing their physical characteristics, geographical location, and history. In presenting his history, he indicated or assumed that often physical types were highly correlated with culture types. My problem is quite the reverse, for I shall attempt to indicate that a high correlation exists between certain American races and the Upper and Middle Mississippi culture. To show this correlation it will be necessary to describe the history and location of these cultures, and to examine the physical types that

occur in each. In presenting the racio-archaeological connections, I shall, in passing, define the races of that area. Thus, the problem fundamental for Coon I shall but touch upon, while the problem of racio-cultural correlation, that Coon merely used as a tool and took little notice of, will be of foremost importance in this paper.

Since I shall deal with a variety of different types of data in the solution of the problem, I believe that I should here state the method I shall use, and thus indicate the manner in which the various topics are logically connected. The method may briefly be stated as follows: first, I shall define the Upper and Middle Mississippi cultures and briefly indicate what is known of their histories; next, I shall discuss the racial classifications that have been applied to the people of the Upper and Middle Mississippi area (and the rest of North America), then I shall present a selected series of anthropometric data for the various cultural divisions of the Mississippi patterns which will indicate what racial types may be closely correlated with the two cultures; and, finally, I shall summarize the evidence for a close racio-cultural correlation in the Upper and Middle Mississippi culture.

Chapter II

The Middle and Upper Mississippi Cultures

Archaeologically the culture content of the Upper and Middle Mississippi phases has long been known. The history of these two phases is not yet fully worked out, but recently great steps in that direction have been undertaken. For this reason, I shall briefly define the Upper Mississippi and Middle Mississippi phases, then, on a more speculative plane, present their histories, as I see them.

Dr. Thorne Duell, in Appendix I, entitled "The Application of a Classificatory Method to Mississippi Valley Archaeology" in Rediscovering Illinois, page 207 to 226, defined the Middle Mississippi as that archaeological manifestation whose culture assemblage includes the following diagnostic traits:

"1. Truncated pyramidal mounds, often in groups, employed primarily as substructures

2. Houses with rectangular floor outlines

3. Wattle and daub house walls

4. Equal-armed pipes in varieties other than the projecting stemmed

5. The employment of marine, cut marine shells and pearls for personal adornment

6. Pottery: effigy, beaker, plate and other specialized forms of common occurrence

7. Pottery: two or more wares present

8. Pottery: narrow, trailing, incising (whole clay is plastic) scratching, etching etc. (after drying or firing) are the chief techniques of decoration

9. Pottery: designs commonly include bands or chains of backward triangles, arches, scrolls and spirals

10. Pottery trowels

11. Awl-sharpeners."

The following were given as Upper Mississippi phase determinate traits:

"1. Mounds produced incidental to burial

2. Houses with circular or elliptical floor outlines

3. Pipe: projecting, stem variety of equal-armed type

4. Personal adornment, use of perforated canine teeth of animals

5. Pottery: common olla generally sole form

6. Pottery: a utilitarian ware usually only one present

7. Pottery: chief technique of decoration are trailing, broad-line incising and punctuating

8. The drawshave (bone beamer)

9. The flat, perforated needle from deer ribs and other animal bones."

The history of Middle Mississippi has seldom been dealt with by archaeologists in publication, though I believe that all of them, upon being questioned, would probably present a very similar history of that culture. The picture here presented is largely taken from the article by Ford and Willey in the American Anthropologist, Vol. , 194 .

The Middle Mississippi culture seems to have been born somewhere in the south along the Mississippi River. The most plausible ancestor that has thus far been brought forth is the

Troyville culture of Louisiana. Many of the culture elements of the Middle Mississippi had a Middle American similarity, so that it has been hypothicated that these elements, thrust upon the Troyville culture gave rise to the Coles Creek culture. This in turn gave rise to all the other Middle Mississippi manifestations. Around 1200 it appears that the members of this southern culture migrated northward along the river and established their culture anew. Rather late in the Middle Mississippi culture period further Mexican elements appeared to form the Buzzard Cult. Just previous to the time of French colonization there was a gradual retreat southward of this Middle Mississippi, and in historic times the French found various Muskhogeon people possessing a Middle Mississippi culture and living south of the Ohio River. On purely archaeological grounds, one might expect to find that the Middle Mississippi culture, since it had been carried by the migration of its originators, had a uniform physical type. The validity of this hypothesis will be tested later in this paper.

The history of the Upper Mississippi culture is probably less well known than that of Middle Mississippi phase. Dr. James Griffin of the University of Michigan, however, has recently contributed much to our knowledge of Upper Mississippi and, presently will publish a paper on its history in the Michigan Academy of Science papers. I have seen the manuscript form of this paper, and the history of Upper Mississippi here presented will be based upon it.

Dr. Griffin treats Upper Mississippi as a blend of Middle Mississippi and Woodland.[3a] This blending took place in varying degrees, and the different degrees of blending formed the various aspects of the Upper Mississippi phase. The Iroquois aspect is seen as a basically Woodland culture that received second-hand influences from Middle Mississippi.[4] "The Fort Ancient aspect... represents a Middle Mississippi offshoot which merged culturally with a basic Woodland group."[5] The Madisonville and Baum foci of this aspect culturally seem to represent a strong Middle Mississippi influence with few Woodland elements; while the Anderson and Fuert group seem to have been basically a Woodland group, only tinged by Middle Mississippi. The Fisher focus of an unknown aspect of the Upper Mississippi phase appears to be a merging basic Middle Mississippi group with but a touch of Woodland.[5] Dr. Griffin at present believes that the Oneota aspect of Upper Mississippi is a Middle Mississippi culture that had diffused into a Woodland territory (like Aztalan) and that in turn was influenced by Plains Mississippi.[7] Certain foci of the Oneota aspect have been identified as Siouan (the Winnebago, Iowa, Oto, and Osage.) Speculation based upon our archaeological evidence would lead one to the conclusion that the Upper Mississippi culture (since it is a mixture of Woodland and Middle Mississippi) will probably have a low racial correlation.

[3a] Griffin, James. The Fort Ancient Aspect. University of Michigan Press, 1943. Chapter XV.

[4] Griffin, James. "The Iroquois in American Prehistory." Papers of the Michigan Acad. of Science, Art, and Letters. Vol. XXIX, 1943.

[5] Ibid. Note 3, page 308.

6 cont. John Griffin, personal communication

7 Griffin, James. "The Iroquois in American Prehistory." Note 3, page 300.

Chapter III
The Races of North America with particular reference to the Middle and Upper Mississippi Areas

Since the conceptual framework of the problem of this paper has been derived from Coon, I shall define race in his terms:-"..a group reasonably unified in the physical sense' (i.e.- have a number of physical characteristics in common) "and living in one place."[9] Fortunately, this basic definition need not be here appended (as Coon deemed necessary in discussing the races of Europe) since the dilemma of overlapping physical types and areas did not occur in Upper and Middle Mississippi times. From the dates at hand it would appear that the races of this area may be easily recognized as to their physical characteristics and geographical location.

The races of this area, however, have been poorly defined. The reasons for their faulty definition are numerous, the most prevalent ones being: subjective bias, inadequate measurements, and poor terminology. I therefore believe that it is necessary to deal briefly with a few of the poorer classifications in order to illustrate why I have accepted the particular definition used here.

The first classification of American Indian races that I shall consider is the one originated by Dixon. He has classified the American Indians into eight groups: Proto-Australoids, proto-Negroids, Cordilles, Mediterraneans, Palae-Alpines, Alpines, Mongoloids, and Ural types. His classification is based upon three indices: cephalic, length-height and nasal indices. Furthermore he believes that these various races owe their existance to migrations of similarly named people from the Old World. My objections are obvious. The nomenclature used by Dixon,infers genetic relationships that are totally unproven, the criteria used for racial classification(three indices) are very

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9. Coon, ibid., p. 11.

tenuous, and the derivation of these races has no substantiating evidence.[10]

The second classification which I shall discuss has received widespread recognition, these being the racial types set up by Hooton.[11] Hooton classifies the American Indians into: Basket Maker, Pseudo-Negroid, Pseudo-Australoid, Plains, long-faced Europeans, Pseudo-Alpine and Large Hybrid types. He specifically states that the names of his races represent genetic relationships. For the most part his classification was based upon a large number of measurements taken on one song series (Pecos skeletal materials). As stated before, there is no empirical evidence for the genetic relationship of these racial types, nor is there justification, on a genetic basis, for the use of his terms. Furthermore, racial types should be based upon a large number of skeletal series if they are to be representative of, and valid for, a large area such as North America.

Hrdlicka's classification of American Indian types is based upon the largest number of measurements on the largest series of skeletal data.[12] The types and the physical characteristics of each are based upon a firm foundation. However, his nomenclature of these types leaves much to be desired. He has classified his types as Algonkin, Siouan, Gulfid, etc. This terminology is very confusing when one considers the physical types of specific tribes, for one finds that there are Siouans of the Algonkin types(Iroquois), Algonkins of the Siouan type, and Plains tribes of the Gulfid types.

The classification I propose to use is one based upon the earlier works of von Eickstedt[13] and later modified by Georg Neumann.(C.Snow and M. Herskovits also use his classification).[14] It appears to have none of the faults of the

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10. Dixon, R.B. The Racial History of Man

11. Hooton, E.A. Indians of Pecos

12. Hrdlicka, Alex. Catalogue of Human Crania in the United States National Museum. Proc. of the U.S.National Museum, vol. 67, art. 7, 1927

(cont)

other classifications. The racial groupings of the area under consideration here are called Sylvids, Centralids and Prairids. The terms lend themselves easily to taxonomy. The Sylvids are characterized as dolichocephalic, hypsicranial, facially leptoeuryprosopic and acrocranial. These tribes occupied the northeastern part of North America. The Centralid group occupied the northeastern section of North America and are characterized as brachycephalic, hypsicranial, broad-faced, with rugged cranial contours. The Prairid race lived in the plains area of North America, and their diagnostic physical characteristics are low vaults, mesocephalic to dolichocephalic skulls, wide flat faces, and prominent noses. Since von Eickstedt's data was not statistically documented and since Georg Neumann's statistics were not published, I offer as proof for the existence of such types the data gathered by Ales Hrdlicka.[15] I suggest that, in interpreting this data, one remember that the type here described as Sylvid has been named Algonkin by Hrdlicka, while the Centralid correspond to Hrdlicka's Gulfid and Prairid to his Siouan.

In the following chart I shall present three pooled series of skulls which I consider to be representative of the Sylvid, Centralid, and Prairid races.

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12. (cont)
Hrdlicka, Ales Report on an additional collection of Skeletal Remains from Arkansas and Louisiana Journal of the Academy of Science of Florida

13. von Eickstedt, E. Rassenkunde und Rassengeschichte der Menschheit Stuttgart, 1934.

14. Personal communication

15. See note 12.

Chart Showing Racial Types in the Mississippi Area

Measurements	Typical Sylvids(18)	Typical Centralids(19)	Typical Prairids (20)
L	182.5	171	179.2
B	157	139	139
LB	104.2	98	——
h'	141.7	138.5	128.8
B'	93.4	——	——
J	136.5	141.4	141.8
GH	123.1	124	121.2
G'H	75.1	74.7	76.2
OML	42.9	42.6 *	42 *
OL	35	34	35.9
NB	26.1	24	26.9
NL	54	50.6	54.6

Indices			
100 B/L	75.39	81.5	77.8
" H/L	77.6	80.9	75.9
" H/B	103.1	94.8	92.6
" GH/J	82.65	87	85.5
" G'H/J	54.98	52.4	53.7
" OL/OML	81.32	——	81.4 *

17. Abbreviations used are those agreed upon at the Birmingham Archaeological Conference, 1938. For meanings of abbreviations see the following page.

18. Georg Neumann The Crania from the Huron Mound and Their Relation to those of Two Late Prehistoric Populations of Central Illinois. p.80 From: Transactions of the American Philosophical Society, vol. XXXII, Pt. I, Nov. 1941. Pooled Naples Mills crania

19. Ales Hrdlicka The Anthropology of Florida Florida State Hist. Soc., no. 1, 1922, p. 118. Pooled series from Florida

20. Ales Hrdlicka Catalogue of Human Crania in the United States National Museum, vol. 69, art. 5, 1927, p. 58. Yankton Sioux Indian crania (pooled).

Definitions of Abbreviations used in Crania Charts

Measurements

L-----Glabella to Opisthocranion length
B-----Maximum breadth
LB----Basion to nasion length
h'----Basion to bregma height
B'----Minimum frontal breadth
GL'---Basion to prosthion length
BOW---Biorbital breadth
J-----Bizygomatic breadth
GH----Total facial height
G'H---Upper facial height
EOW---Anterior interorbital breadth
OML---Orbital breadth
OL----Orbital height
NB----Nasal breadth
NL----Nasal length
ML----Maxillo-alveolar length
MB----Maxillo-alveolar breadth

Indices

100 B/L-----Cranial index
100 H/L-----Length-height index
100 H'/B----Breadth-height index
100 B'/B----Fronto-parietal index
100 GH/J----Total facial index
100 G'H/J---Superior facial index
100 OML/OL--Orbital index
100 Nb/NH---Nasal index
100 MB/ML---Maxillo-alveolar index
100 J/B-----Cranio-facial index
100 B'/J----Zygo-frontal index

Fisher Focus

The anthropometric data from the Fisher site shows that 18 individuals belong to the Centralid type while 6 belong to the Sylvid type.[1] I have presented the individual series of measurements on each skull as well as the pooled Sylvid and Centralid groups.

[1] Sylvid--Burials Nr 73, 81, F 1, F 100, Nr 101, 102.
Centralid--all the other burials.

Madisonville Focus

The series from Madisonville consists of 39 skulls. Unfortunately there is considerable variability within the group. However, the majority are Centralid (actually about 34). Thus in spite of the variability I am presenting a pooled series. The pooled series represents a Centralid type. I feel justified in presenting this pooled series for two reasons: one, a chart showing the 39 skulls would be cumbersome, and second, since the predominant type is Centralid and the pooled type is Centralid, an insignificant amount of masking has taken place by this pooling.

Anderson Focus

This anthropometric data has been given to me by George Neumann. He has stated that there is little variability among the individuals of the group and that it was "safe to pool them."

As may be seen, the type is definitely hybrid. In the light of the archaeological data, this is not surprising since the Anderson focus is the most Woodland-like focus of the Fort Ancient Aspect.

The Seneca Focus

The data available on the Iroquois is of three types: Ritchie's general observations lacking anthopometric data, Hrdlicka's data that is called Iroquois but may not be such since he considers any prehistoric skull from upper New York to be Iroquois, and the pooled series of Newman which were made from measurements on skulls excavated by W. Gray in western New York state at a known historic Seneca site. I have chosen the latter series as the one most trustworthy. Also, Newman has said that it is typical of all the Iroquois materials. I have also used his pooled series since the individual measurements show little variability.

These skulls are Sylvid in type. Also according to Ritchie they are identical with the Owasco physical type.[22] If one accepts Griffin's interpretation of Iroquois archaeology, that the Iroquois represent a basically Woodland (Owasco) people who have been influenced by Middle Mississippi culture, it is not surprising to find that they have a Sylvid physical type.[23]

[22] Ritchie, W. B. The Pre-Iroquoian Occupations of New York State. Rochester Museum of Arts and Science, 1944. P. 101.

[23] Griffin, James.

Spoon River

This cranial data comes from two mounds in Fulton County, Illinois, Fo^{14} and F^{o34}. The series here presented represents the undeformed male population of those two prehistoric habitations.

Unfortunately George Neumann has usually presented these skulls as a pooled series. The data on individual crania show that this pooling is not justified and hides the true physical characteristics and racial types of the population. On the following pages I have presented the series of measurements and indices taken on each individual. These individual series show that the Spoon River focus population consisted of about 20 Centralids and 7 Sylvids. For comparative purposes I have pooled the Centralid and Sylvid series.

The Spoon River focus components indicate that the Centralid-Middle Mississippi correlation was close though not as close as that of the series previously presented. This lower racio-archaeological correlation may be explained by observing the geographical position and archaeological content of the Spoon River components. Geographically the Spoon River focus is situated in an area that was primarily Woodland. Also, archaeologically the Spoon River components show some Woodland admixture such as pottery with a cord marked surface finish, flexed burials, etc. Thus it would appear that Middle Mississippi Centralid group when migrating into the northern Woodland territory (Fulton County) mixed with the Sylvids already there.

Moyer Island

The Moyer Island cranial materials come from two sites in the Pickwick basin: $Lu^{V}32$ and $Lu^{625}.16$ Both are Middle Mississippi sites. The measurements and indices on each individual cranium are not available to me so I must present their pooled series. This pooled series that I am presenting is not the one published, but one made by Snow on a larger series at a later date. Since Snow and Newman are competent physical anthropologists and since concerning their individual measurements and indices they have stated "We feel justified in pooling them to form a total 'Moyer Island' series"[17] I believe that their pooling of the cranial data does not mask the characteristic of each individual series.

The individuals who make up this pooled series are all males and both deformed and undeformed. The pooled data indicate the people of Moyer's Island (Middle Mississippi culture) were of the Centralid type.

[16] Newman, C. E. and C. E. Snow, "Skeletal Material from Pickwick Basin", from W. S. Webb and D. L. De Jarnette, Archaeological Survey of Pickwick Basin in the Adjacent Portions of the States of Alabama, Mississippi and Tennessee. B. A. E. Bulletin 124, 1942.

[17] Ibid. P. 141.

Kentucky Stone Graves

Archaeologically the skeletal material from the stone graves or stone cists of Kentucky may be identified as being Middle Mississippi. No other groups have been ascertained to have had this particular type of burial custom.

The series here presented was published by Ales Hrdlicka in an article "The Anthropology of Florida", a publication of the Florida Historical Society, No. 1, 1922. This particular data may be found on pages 111 and 112. The series represent a series of 31 males, cranially undeformed. Since the measurements and indices taken on each individual show considerable uniformity, I have presented this anthropometric data as a pooled series.

A glance at the accompanying data indicates that the group was round-headed, hypsicranial, and broad faced and therefore of the Centralid type. Thus there appears to be a rather close correlation between the Centralid race and the Middle Mississippi culture in Kentucky.

Tennessee Stone Graves

The material was measured by Marshall L. Newman and is as yet unpublished. It represents a reworking of the crania that P. C. Fuller originally measured in 1916 and which formed the basis for his doctoral dissertation at Harvard. The group is highly selected in that all are males and all are undeformed. Within this group a few skulls (about three) were definitely dolichocephalic, deep vaulted, and narrow faced, but the majority of the individuals were round headed, high vaulted, and wide faced (Centralid). Since the majority were Centralid and since the pooled series represents a Centralid group, I do not believe my statistics have been marked by pooling. Therefore I have used a pooled series.

The archaeological material associated with these crania is Middle Mississippi. Therefore, there appears to be again a close correlation (37 to 4) between the Centralid physical type and the Middle Mississippi culture.

[A Doctoral Thesis in Physical Anthropology presented to the Department of Anthropology in fulfillment of the requirements for the degree of Doctor of Philosophy] (9) ~~2~~ * 24

[illegible] January [illegible] 1940 ([illegible])